
18. BRACKISH WATER HABITAT

DRAFT - For Discussion Only

Distinguishing Characteristics
October 15, 1997

E - 0 0 1 5 7 2

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Brackish Water Habitat Supporting Information

Delta outflows in excess of existing Delta standards provide a degree of fishery protection not covered by the other distinguishing characteristics. While operating to meet Delta standards, some alternatives may operate closer to the standards more frequently than do other alternatives. Currently available methods do not directly equate fishery protection with Delta outflow. However, the X2 (approximate location of 2000 parts per million of total dissolved solids) standard may provide an indication of improved or diminished protection for the fishery as outflows increase or decrease. The location of X2 affects the area/volume of the brackish water habitat and the value of this habitat varies with time of the year.

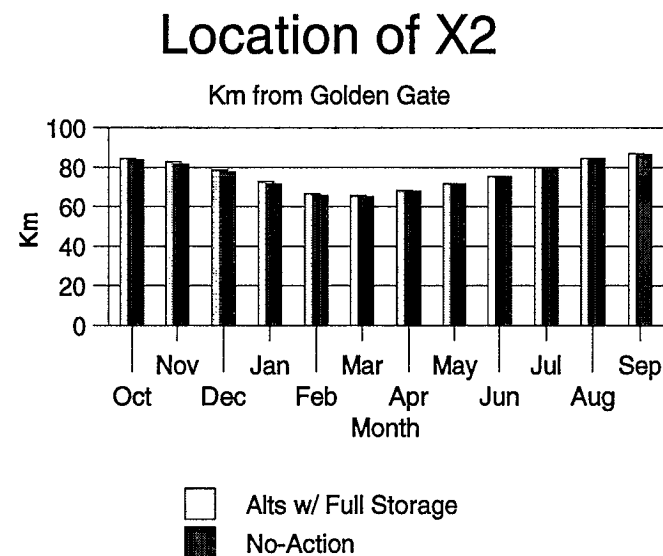
Definition

"Brackish Water Habitat" in the Western Delta is the aquatic habitat with salinity levels of approximately 2000 parts per million. The location of X2 is an indicator of changes of brackish water habitat between the alternatives.

Summary

Since the modeling assumes that Delta standards will be met, there is little change in X2 location between the alternatives. Some small reduction in the number of X2 days for alternatives exporting more water will likely be shown as more detailed modeling progresses. However, these potential changes are assumed at this time to be insignificant.

The chart at right and Table 18.1 show a summary of the average location of X2 for various months of the year for water years 1922 to 1992. The chart shows insignificant changes in X2. Therefore, habitat changes are assumed to be insignificant between alternatives. In Table 18.1, all alternatives were given the same score of "3".



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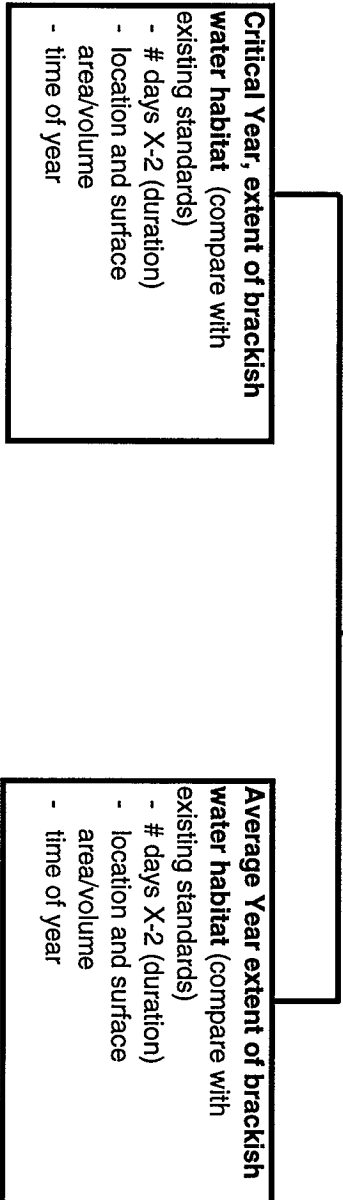


Table 18.1 Summary

Alternative	Critical year			Average year			Overall Score
	# days X-2	Location/area/volume	Time of year	# days X-2	Location/area/volume	Time of year	
Exist. Cond							3
No-action	Some reduction in number of X2 days with more export from Delta. Detailed modeling not available at this time but not expected to be significant.			Some reduction in number of X2 days with more export from Delta. Detailed modeling not available at this time but not expected to be significant.			3
1A							3
1B							3
1C							3
2A							3
2B							3
2D							3
2E							3
3A							3
3B							3
3E							3
3H							3
3I							3

Values are on a scale from 0 to 5, with 0 representing the least habitat and 5 representing the most habitat.

To
Decision
Matrix

Supporting Information for Table 18.1

The amount of brackish water habitat can vary by alternative and time of year depending on the Delta outflow.

Preliminary DWRSIM model runs provide an indication of how X2 can change. Since preliminary DWRSIM model runs have not been made for all alternatives, four runs were made to cover the range of the existing conditions, no-action alternative, and CALFED alternatives:

- Case 469; existing conditions.
- Case 472; no-action alternative.
- Case 472b; no-action alternative and South Delta modifications to increase South Delta permitted export capacity to the physical capacity. This will show approximate data for alternatives that do not have associated storage.
- Case 510; no-action alternative, South Delta modifications to increase South Delta permitted export capacity to the physical capacity, and North & South (aqueduct storage) of Delta surface storage. This will show approximate data for alternatives that have significant surface storage.

The preliminary data on the location (kilometers upstream of the Golden Gate) are shown by month for four different flow periods. The **first chart** shows a comparison of computed X2 position for water years 1922 thru 1992. Case 472b and case 510 do not show significant movements of the X2 location in comparison with the no-action alternative. For example, case 510 shows an average upstream movement of only about 0.3 km in the November through June period compared with the no-action alternative. This is not a significant change in habitat.

The **second chart** shows a comparison of computed X2 position for the dry/critical years of the 1922 thru 1992 period. Case 472b and case 510 do not show significant movements of the X2 location in comparison with the no-action alternative. For example, case 510 shows an average upstream movement of only about 0.2 km in the November through June period compared with the no-action alternative. This is not a significant change in habitat.

The **third chart** shows a comparison of water years 1928 through 1934 (the critical dry period in California). Case 472b and case 510 do not show significant movements of the X2 location in comparison with the no-action alternative. For example, case 510 shows an

average upstream movement of only about 0.2 km in the November through June period compared with the no-action alternative. This is not a significant change in habitat.

The **fourth chart** shows a comparison of water years 1987 thru 1992 (the recent dry period in California). Case 472b and case 510 do not show significant movements of the X2 location in comparison with the no-action alternative. For example, case 510 shows an average upstream movement of only about 0.2 km in the November through June period compared with the no-action alternative. This is not a significant change in habitat.

The number of X2 days cannot be estimated with the current monthly modeling in DWRSIM. More detailed modeling will be conducted as studies progress. Some decrease in the number of X2 days can be expected for the alternatives with increased export from the Delta compared with the no-action alternative. However, considering that in most cases the increase in export is only several hundred thousand acre-feet, the reduction in X2 days is not expected to be significant.